

The highest quality custom formulations and support

For body detoxification and liver disease treatment

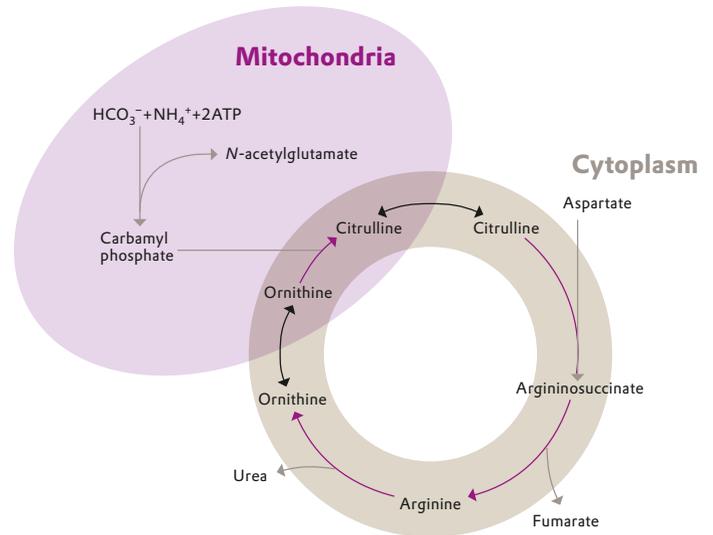
L-Ornithine-
L-Aspartate



Amino acids for body detoxification

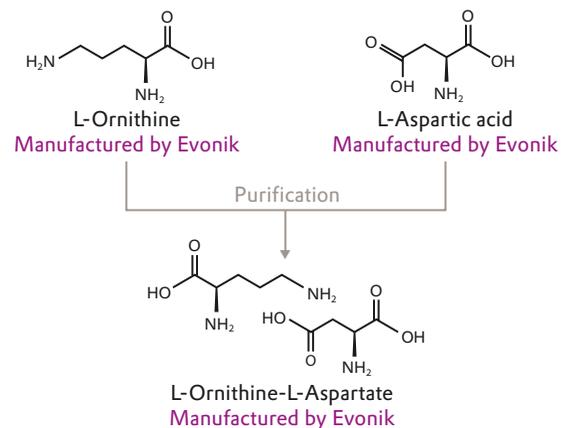
L-Ornithine is a non-essential amino-acids that is found naturally in a range of foods including fish, meat, eggs and dairy products. Together with other amino acids such as arginine and aspartic acid, it plays a key role in supporting liver function and preventing potentially toxic accumulations of ammonia through its conversion into urea and subsequent release into urine.

In addition to acting as a detoxifying agent, L-Ornithine-L-Aspartate can provide a number of other health benefits including maintaining the right acid-base balance in the body, boosting energy levels, improving sleep quality and aiding in muscle construction.



Evonik's L-Ornithine-L-Aspartate

As one of the world's leading manufacturers of amino acids, Evonik has combined its production capabilities for L-Ornithine and L-Aspartic acid to provide pharmaceutical and nutritional companies with L-Ornithine-L-Aspartate as a stable salt. It can be used either as a nutraceutical to help maintain health and reduce disease risk, or as a medicinal treatment for liver disease.



Extensive backward integration

Evonik is a reliable global partner for the high-quality supply of L-Ornithine-L-Aspartate in either DMF and cGMP grades, as well as food grades via compliance with ISO 22 000. Our extensive backward integration of single amino acids and other ingredients is a core competency, with a network of production sites in Europe and Asia used for fermentation, purification and production processes.

Combined with our strong technical expertise, robust quality systems and local market knowledge, this backward integrated helps us to meet stringent regulatory requirements across key global markets.



An Evonik amino acid production facility in Ham, France

Available in a range of standard or custom formulations to match your specific needs

Evonik can leverage several decades of expertise across amino acid manufacturing, formulated products, formulation development, and scale-up to create a range of solid oral dosage forms in various colors and flavors.

All are designed to utilize standard production equipment such as granulation and tableting lines. Additional Ornithine-derivatives, APIs, supplements or nutraceutical grades can also be supplied upon request.



EFFERVESCENT FORMULATIONS

Easy to dissolve in water, and with an appealing taste and feel for comfortable swallowability and improved compliance.



CHEWABLE TABLETS

When swallowing is not an option, these convenient, effective systems combine high-active content with a pleasant feel and taste in the mouth.



RAPID MELT GRANULES

High-concentration granules containing no sugars including fructose that dissolve in the buccal cavity within seconds.



TEA BAGS

Ingredients that are heat-stable in boiling water to protect actives, and combine well with the flavor of natural black, herbal or green teas.

Enhanced purity and stability

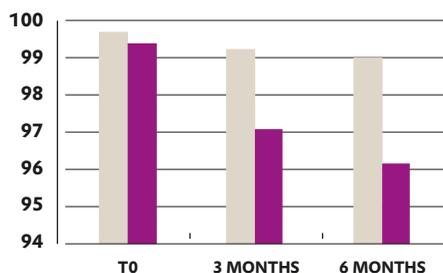
With our strong knowledge of each process step, Evonik can offer customers highly purified L-Ornithine-L-Aspartate that has extremely low levels of methanol content and endotoxins.

Due to its high purity, our L-Ornithine-L-Aspartate delivers superior stability. It also offers superior particle size distribution and crystalline structure compared to other marketed products.

Methanol content	≤ 750 ppm
Endotoxin levels	≤ 6 EU/g
Purity	> 98%
Transmittance	> 98%

Stability data for transmittance under ICH guideline

Stability at 25 °C



Conditions of the stability studies: 25°C ± 2°C ; 60% ± 5% RH
 ICH: International Conference on Harmonisation of Technical Requirements for Registration of Pharmaceuticals for Human Use

This information and all further technical advice are based on our present knowledge and experience. However, it implies no liability or other legal responsibility on our part, including with regard to existing third party intellectual property rights, especially patent rights. In particular, no warranty, whether express or implied, or guarantee of product properties in the legal sense is intended or implied. We reserve the right to make any changes according to technological progress or further developments. The customer is not released from the obligation to conduct careful inspection and testing of incoming goods. Performance of the product described herein should be verified by testing, which should be carried out only by qualified experts in the sole responsibility of a customer. Reference to trade names used by other companies is neither a recommendation, nor does it imply that similar products could not be used.

201910-PI-V1



EVONIK NUTRITION & CARE GmbH
Health Care Business Line
Pharma & Food Ingredients

healthcare@evonik.com
healthcare.evonik.com